

Abstract

The present invention relates to glass, glass-ceramic materials, lamp reflectors and processes for making them. The glass material has a composition, by weight of the total composition, comprising 56-67% SiO₂; 9-22% Al₂O₃; 3.4-3.8% Li₂O; 1.8-2.6% ZnO; 1.5-2.5% MgO; 3.3-5% TiO₂; 0-2.5% ZrO₂; 1.5-3% B₂O₃; 0-6% P₂O₅; 0-0.6% F; less than 500 ppm Fe; and components resulting from effective amount of at least one refining agent. The glass-ceramic material of the present invention contains β -quartz solid solution as the predominant crystalline phase, and can be obtained by proper thermal treatment of the glass-ceramic material. The glass-ceramic material is particularly suitable for heat-resistant lamp reflectors which require a high surface smoothness Ra of lower than 75 nm, a low CTE between 25 and 300°C of less than $10 \times 10^{-7} \text{ K}^{-1}$, and IR transmission at about 1050 nm of over 80% at a thickness of 3 mm.